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EPSON Connection

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VALDOCS 1.18 IS HERE

The newest version of Valdocs, which is a "final" release, is now available. Epson America, Inc. has sent copies to all the disbributors who will be sharing them with their local dealers, and with you. The 1.18 is indeed faster, and gives you the following options you did not have with earlier versions.

- Added help messages.
- More documentation.
- Optional line spacing of 1, 2 or 3 lines within the editor by pressing the **size** key.
- An indicator telling how many documents are left in the spooler to print. You can spool up to 3 documents.
- Valdocs now starts up in **replace** rather than in **insert** mode.
- The alpha graphics character can be downloaded to the FX printer only, by using the following steps. Have both dip switches 1 and 8 down when starting up, when you see the "Welcome to Valdocs 1.18" banner, put dip switch 8 back up. Note– the FX internal dip switch SW1-4 (in the group of 8) must be in the OFF position to download characters. Regretfully, the RX and MX printers cannot do this. No data loss should occur.
- Mail will support Dow Jones and the Comdex modem.
- Support for the Comfiler 7000 series hard disk.
- The ability to shade bar graphs.
- Added protection for your files when you get a "disk is full" message, there is the means to store it on another disk, follow the menu screens carefully.
- Control > will redisplay the screen if you think you have lost information. (this is very handy!)
- Control I moves the cursor to the next tab stop.
- An explanation of the Quirks menu.
- The ability to turn off page numbering.
- The option of putting the Valdocs mail list on a hard disk drive.
- The means to send and receive more than one file.
- The ability to change the address book size.
- The additon of indicating the terminal type in the setup program, Epson QX-10 is now Televideo 920 instead of Lear Siegler ADM3A.

Now you can turn off page numbering

- The choice of turning off the clock display.
- Underlining by pressing the **style** key.
- The ability to choose a faster video screen display called **quick display**. Handy especially to those who are real fast typists. To accomplish this you must be in the **Novice** or higher experience level. You select quick screen through the quirks menu (Control Q). What this does is actually turn the screen into a bit mapped screen rather than character, so you will not see bold or italics when you do it on the screen, but it will indeed print out properly.
- Provides support for all the MX (GT), RX and FX printers in graphics applications. (not the shifted ones)
- Selection of OTHER, in printer type, will support the NEC, Spinwriter, Diablo and Qume printers. You will need to indicate characteristics of these as prompted.
- The option of storing a Valdocs document as a non-indexed file.
- The ability to unlock the cursor.
- The ability to make a backup directory of your disk.
- A way to recover an old disk directory.
- A way to check for bad sectors on your disk.
- The ability of using Peachtree TM Spelling Proofreader to check the spelling in your Valdocs document, this is a somewhat involved process.

There is one problem with defining a page as a legal length, this is being corrected. The alpha graphics character does not work yet, and you still have to store first in order to print.

Our thanks to Rising Star Industries for these improvements, and to the Epson America staff. We look forward to future versions, 2.0 and so on. Our congratulations to their staff for putting Valdocs all together. Of course, this was just a summary of some of the changes.

There is a book available about the QX-10 and version 1.18. The title is *The QX-10 Book, Version 1.18.* You will find a review of the book and ordering information in our Bookstore section.

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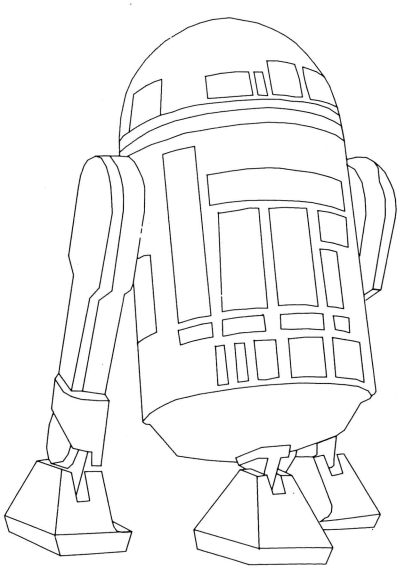
Many of you have expressed an interest in having advertising in the newsletter on a regular basis. As you know, we will be doing this in our next issue. Please let us know if you, as a user, benefit from the ads.

Those of you that have expressed an interest in placing advertisments in our next issue, will be receiving information on rates shortly. If you don't hear from us by October 10th, please contact us.

FEATURED NEXT ISSUE

Introduction to Data Base Systems
Software Reviews
More Graphics
Hard Disk Drives

Drawn by Comscriber I



A WORD FROM YOUR EDITOR

The response to our first newsletter has been wonderful. Thanks for the positive feedback, calls, offers of assistance and questions.

Our membership has, in one month, grown from 12 to 300 and is currently increasing at about 20 new members per day. We have members in 51 states and, of those who listed their profession, the range is so diverse that I will list some of them here for you: Engineers -6; Retail stores -6; Lawyers -2; Consultants -4; Accountants -6; Word Processors -4; Photographers -3; Physicians -3; Teachers -3; Psychologists -3; Real Estate -3; Writers -2, Researchers -2; Restaurants -2; Genealogist, Astrologer, Historian, Studen, Green House, Music, Stock Broker, Construction, Medical Equipment, Economist, Opthomologist, Telecommunications, Publicity, Wholesale, Speech and Hearing, Mental Health, Bookstore, Theatre, Finanical Planner, General Motors employee and Draftsman. What great resources we can be to each other.

By sharing the special things we are each doing with our Epson, and the programs that have been helpful or fun, we will be a great source of help to each other. One of our restaurant owners is using his QX-10 to store recipes. He has generously shared one with us for the fall weather approaching. Requests for user friendly accounting packages with payroll and inventory have been frequent. Interest in expanding the graphics capabilities is high. We have also received many requests for information on HX-20 software and applications. Please share your successes and failures with us.

It has been great talking and corresponding with so many of you. We will be setting up a bulletin board on our QX-10 so that we may share files and information with you, we will include details to access it in our next issue.

****Please take note: the brackets ([ ]) that appear in out text, represent the (< >) you are familar with on your monitor.*

Hasci and Valdocs are registered trademarks of Rising Star Industries; CP/M, CP/M-86, CBASIC, MP/M-86, PASCAL/MI + and PL/1 are trademarks of Digital Research; TPM, Z80, and TRS80 are trademarks of CDL, Zilog and Tandy respectively.

TPM-II, The System Behind Valdocs

We described CP/M by Digital Research in the first issue of the Epson Connection. This special program makes any computer which uses it look the same to applications programs such as Visicalc or Multi Plan. Because CP/M is the most popular computer operating system, an enormous amount of software has been written for it.

Valdocs uses a different operating system, named TPM-II (Transient Program Manager). It is written in machine language, and is specifically for use with the Z-80 microprocessor family. This system looks like CP/M to any applications program written for CP/M. Consequently, the software available for CP/M will also work with TPM-II. The two systems are not identical. The version of TPM-II distributed with the Epson does not yet contian all of the commands in the normal TPM-II system. The full operating system with all applications and commands can be optained through Computer Design Labs, Inc.

The major function of an operating system is to make it easy to use a computer's hardware, this includes the keyboard, display, printer and especially the floppy disk drives. CP/M and TPM-II do this by three means.

First, "Built-in" commands are available a few moments after the computer's power is turned on. Included here are such things as showing the names of the files on a disk drive (DIR) and copying the contents of a disk file to the display (TYPE). Built-in commands are issued to your Epson when you see the cursor immediately after the two characters "A]" or "B]" at the left edge of the screen. This means that TPM-II is in control and waiting for commands. (You get to TPM-II by pressing the **MENU** key and **[e]xiting to TPM**, remember, you must be setup in the **Advanced Experience** level.)

Second, transient commands are issued like built-in commands, you just type their name. However, the programs used to perform the commands are too large to stay in your computer's internal memory when needed, hence the name transient commands. Included here are such functions as copying files (ZPIP) and inquiring about the status of the data disk drives and changing it (SP or SP:B).

Third, system services are special programs, or subroutines, which provide applications programs the access to your computer's resources. For example, whenever Valdocs reads or writes a disk file, it is using a special program provided in TPM-II.

TPM-II is better than CP/M in both commands and services. For example, the TPM-II command, PROTECT, lets you assign up to 8 protection levels to the files on your disk drives. These protections range from 0, no protection at all; to 7, which means nothing can be done to the file. Protection levels make it difficult to accidentally destroy a file either by ERAsing it or by copying new information over old. Files with protection levels from 5 to 7 can't be erased or copied over. Files with protection level 4 can't be erased either, but new information can be added to the end of the file. If a file contains a program that can be, and is, executed through MBASIC, the protection level will be reset to [0]. Protection levels are assigned, inspected, and changed with the PROTECT command. To erase a file with a protection level of 4 or greater, you must first change the protection level to a lower number, like 0, and then you will be able to erase it. This is a feature not available in CP/M to date.

TPM-II provides the same services to applications programs as does CP/M and they are used in the same way. Another service that TPM-II offers is the ability to return the current date and time to a program.

Because TPM-II and CP/M are similar, both from the user's and application program's point of view, you can find out about some of the capabilities of them from the books listed in the Bookstore section of this newsletter. Rising Star is in the process of writing a TPM manual for the QX-10 and we hope it will be available in the near future.

Computer Design Labs, Inc., is located at 342 Columbus Ave., Trenton NJ 08692. (609) 599-2146.

"Here's the print out on that problem we ran through the computer— Not tonight, I have a headache!"

HARD DISK DRIVE

The Comfiler was not available for review in this issue. I hope it will be available by the Nov/Dec issue. My review will therefore be limited here to the Hard Disk Drive manufactured by Quality Computer Services (QuCeS), 178 Main Street, Metuchen, NJ 08840, (201) 548-2135. They are a distributor, and therefore do not sell directly to individual users, but will work with you to locate a local dealer.

A side note— in discussing hard disc drives you will run into descriptions like 20 Megabytes unformatted, 16 Mbytes formatted. When a disk is used, it first has to be formatted, which means that it is divided into tracks, like grooves on a record, and then these grooves are further divided into sectors. These sectors each have to have their own unique address for the computer to find them again. Therefore, the sector has an address area that the computer can read, and an area for your data to be stored. Some space is used for an index signal, and a sector identification mark. All in all after a disk is formattted, ready to receive data, there is less space available. Your double sided double density floppy disks have 500K bytes unformattted, and 376K bytes formatted.

The QuCeS hard disk drives, the 10, 16 and 20 Megabyte (formatted) are made by Miniscribe, and the 41 and 84 Megabyte drives are made by Rodine. Retail costs: 10Mb— $2499; 16Mb— $2799; 20Mb— $2999; 41.8Mb— $4999; and 83.6Mb is $7999. They are coming out with a 5 inch removable cartridge disk which fits inside the case of most of the above units.

Warranty is for one year with the owner paying freight for return shipping. They guarantee to ship it back within 72 hours after receipt. You should call first if you think something is wrong and talk to the technical support staff, you may find that it is not necessary to send it back. If you do have to return it, they will give you a return authorization number.

They have a program to configure the disk in various ways, the suggested way is to have 3 distinct areas, a small area for Valdocs and TPM, a small area for CP/M, and a large common data area that can be accessed by both operating systems.

Experience Speaks— I received my 20Mb (unformatted) drive excitedly. It is the same depth as the QX-10 computer, 12.1 inches wide, and about 1 inch higher than the base computer unit (5.3"). The case color matches the QX-10 and it has an attractive appearance. The instructions for inserting the card into the option slot were clear and easy to follow. Be sure to use the disk supplied by QuCeS in the A drive when formatting the hard disk drive. The instructions describe the format operation adequately. After a little break, I returned to find my spouse busy working on it, but kept finding that only half of the 16Mb were available. Taking over the next day, I spent about 5 hours and several phone calls to the tech support at QuCeS (thanks Adrian!). At Last!!! It works beautifully. I have saved space for 5000 mailing labels for now. I find it faster and most convenient not having to swap disks in and out when using an accounting package with 5 disks. I highly recommend a hard disk if you need a lot of storage space. If you need a detailed description on setting the disk up, send a stamped, self addressed envelope with your request to us, and I will mail you a copy.

There are other hard disk drives available that we will be trying out and reviewing. Bi-Technology is located at 10 Carlough Rd., Bohemia, NY, 11716, (516) 567-8155. They are also using drives by Miniscribe. They have a 5Mb at $2399, a 10Mb at $2549 and a 15Mb at $2699. These hard disk drives are ready to operate with your QX-10. Bi-Tech is a retail store, so individuals can order directly, they also offer special pricing to dealers. I am looking forward to trying their hard disk out, and I am also hoping the Comfiler hard disk by Comrex will be ready shortly. I have been informed that it will be available in October and that it will come with the Valdocs 1.18 version.

HARDWARE

QX-10 MULTIPLEXOR

Bi-Tech Enterprises, 10 Carlough Road, Bohemia, NY 11716, (516) 567-8155, has a multiplexor for the QX-10 allowing you to connect several QX-10's to the same hard disk drive. The suggested price is $795 for the unit, and $325 for each QX-10 unit connector that shares the multiplexor. *Look for our review of this unit soon.*

HX-20 BAR CODE READERS WITH WANDS

Interface Solutions, Inc., P.O. Box 11167, Memphis, TN 38111. Suggested retail price is $323.

Bi-Tech Enterprises, 10 Carlough Road, Bohemia, NY 11716 (516) 567-8155, has a bar code reader program that retails for $279 for use with the HX-20.

HX-20 DISK DRIVE

Bi-Tech Enterprises, 10 Carlough Road, Bohemia, NY 11716 (516) 567-8155, is currently working on a 3 1/4 inch 3/4Mb disk drive for the HX-20. Three of these could be hooked together. They are using a Tabor drive unit.

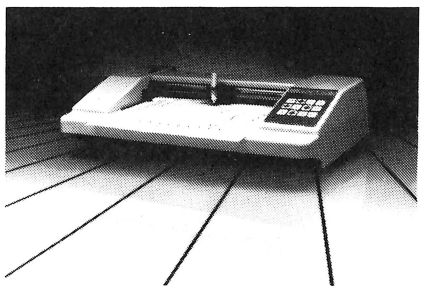
COMFILER

The hard disk drive by Comrex is finally complete with 1.18 software. This will be out in October at a suggested retail price of $2295.

COMMUNICATOR

The 300 Baud internal modem card for the QX-10, by Comrex, has also been completed, and will be available around late October. Suggested retail is around $169.95.

HARDWARE



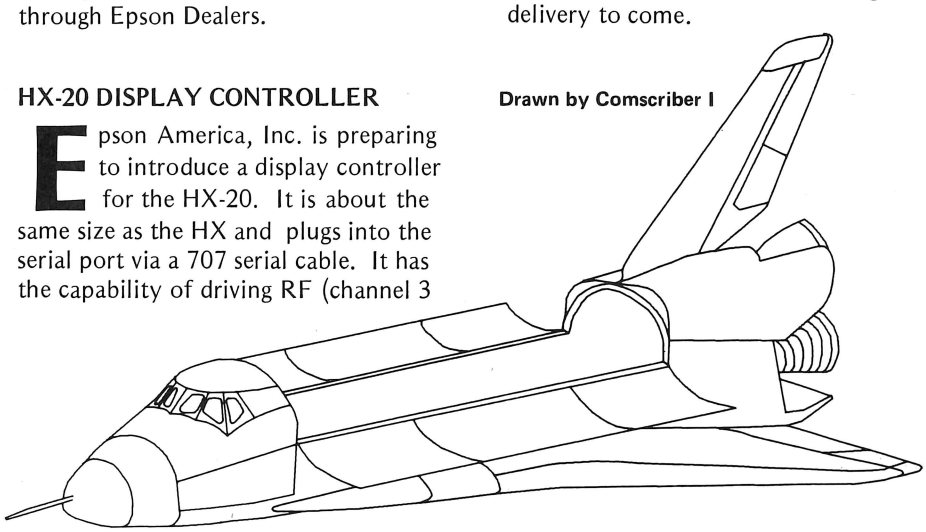
COMREX COMSCRIBER I

The R2-D2 and space shuttle illustrations in this newsletter were drawn by the Comscriber. This is a single pen plotter. Different colored pens can be used, the paper size is 8 1/2 x 11 inches in length on a single up to 120 inches in length on a single roll of paper. Characters from 1/8 inch high to 20 inches high can be drawn, and a graph or symbol can be stored in the plotter's memory. The speed of drawing is up to 6 inches per second. (Comrex International, Inc. is a subsidiary of Epson American, Inc.) The pens that come with the comscriber are red, blue, green and black. It attaches via a standard parallel cable. Suggested retail price is $795. This is available through Epson Dealers.

HX-20 DISPLAY CONTROLLER

Epson America, Inc. is preparing to introduce a display controller for the HX-20. It is about the same size as the HX and plugs into the serial port via a 707 serial cable. It has the capability of driving RF (channel 3 or 4), black and white, color or composite. The display controller uses a 1499 character buffer, you cannot set the screen size smaller than 32 x 16 or larger than a product of 1499. It does not seem to support ski writer. Pricing and delivery to come.

Drawn by Comscriber I



SOFTWARE

HX-20 REPORTABLE DATA CAPTURE

REP Systems, 5328 21st Ave., SW, Seattle, WA 98106, (206) 762-6434, allows you to set up a data file like a Data Base system and is good for physical inventory, sales and order taking. Suggested price $75.

QX-10 ACCOUNTING PACKAGE

Star Software Systems, 20600 Gramercy Place, Suite 103, Torrance, CA 90501, (213) 538-2511. 'The Accounting Partner' includes general ledger, accounts receivable and payable and payroll. Suggested retail price $395.

HX-20 INTERIOR DESIGN PROGRAM

Sydney Dataproducts, Inc., 315 Laurel St., San Diego, CA 92101, (619) 231-1775, have deleloped a series of microcassettes for use with the HX-20, for estimating drapery, other programs for carpeting, cabinets, picture framing and mirror glazing are in the works. Suggested retail price for the Custom Drapery Estimator is $350; Commercial System Drapery Estimator is $400.

THE MEDIA DIRECTOR

A user friendly software program for use by radio stations, advertisers, advertising agencies and any buyer or seller of radio time. The program calculates and compares ratings and provides analysis of various types of information. Contact: Alpha Computer, 4 Irvine Row, Carlisle, PA 17013 (717) 245-2457.

HX-20 GAMES AND HOME PROGRAMS SOFTWARE

Software Riches, Riverview Terace, Irvington, NY 10533, (914) 591-6470. Programs available are: an alphabetizing program, $8.95; calculist, $48.95; also games like Galactic War, $10.00 and Paddle Ball. $8.95. Contact them for a free catalog.

HX-20 SMART TERMINAL II

Microprocess Computer Systems, Inc. 13500 Reeck Rd., Southgate, MI 48195 (313) 281-2800, offers a new edition of 'Smart Terminal' which turns the HX-20 into a smart terminal, able to receive and send, using Christiansen Protocol. Suggested price $70.00.

In starting out with Valdocs you may not have noticed what experience level was indicated. The Valdocs disks arrive set up in the beginner mode. To find our, press **menu** key, and then choose [**m**]enu of applications, choose the [**L**]eft drive, choose **setup.sys**, press return twice to see the setup program. It will display several options including experience level. To choose the experience level move the cursor down to [e] and press return. Then change your experience level to **advanced** and press undo until you get back to the editor. This will allow you to access more options in the various menus, like exiting to TPM. Avoid the expert level as you can damage your files in that level. Read the Valdocs Release 1.18 before choosing [e]xpert...

GRAPHICS — Line Drawing

by Earl Goodrich

Earl has been doing some very creative things with the QX-10, as can be seen in this graphics program. We can look forward to more graphics programs in the future, and hope to see Earl writing some exciting adventure programs for the market soon. Our sincerest thanks to Earl for this program and article, we are pleased to welcome him to our consulting staff. Look forward to circles in the near future.

This program demonstrates some of the incredible graphics capabilities of the Epson QX-10. The speed and power of this ability is due in large part to the NEC 7220 Graphics Display Controller (GDC) in the computer. This chip is the first in what will surely be a long succession of chips devoted to the task of handling a raster-based (scanned like a tv) graphics system.

The Epson system normally uses this chip in an 'enhanced text' mode, where graphics is not available, but characters can be drawn with little screen memory usage, and each character can have several attributes, like blinking, reverse blinking, half-intensity, and/or invisible. Each character code causes the display of an 8 x 16 pixel (a dot on the screen) image, which is read from a character generator EPROM on the display board inside the computer. The 80 x 25 character screen, 640 x 400 dots, uses 4000 bytes of display memory.

In graphics mode, each pixel will be exactly the value of a bit of screen memory. The 640 x 400 QX-10 screen uses 256,000 bits of memory, which is organized as 16,000, 16 bit words for access timing. As you can see, this takes a lot more memory, but we are no longer restricted in what we can put on the screen, or where to put it. We do however, give up the blinking and half-intensity attributes (the others are easy to fake with software).

One further note before we get to the detailed program description. Unless you have turned off the time display using the SETUP program, the time will continue to be displayed on the lower right hand corner of the screen. This would only show properly in the character mode, since we wish to do graphics, we should turn it off. More importantly, we don't want the system to try to update it at an inopportune time when we are trying to do something else. So, the first thing we do is turn it off in the program. The POKE in line 10, zeros the contents of memory address FAB2, which turns off the flag in the CP/M version. If this doesn't seem to do it, or the program just goes away, or does something else funny, delete this line (and the corresponding line 3005 that turns it back on) and turn it off using SETUP through Valdocs.

This program uses the extended basic OUT statement a lot. This statement talks directly to the machine hardware. In our case, we use it to talk to the GDC chip. The first number in the program is an address that defines whom we wish to talk to, in this case, hexadecimal address 39 and 38. The second number is the 8 bit value (0-225 decimal) that gets sent to that address.

Address 39 is the number of the port that communicates with the GDC command register, which tells it what to do.

Address 38 connects to the parameter port, which is used to give the GDC the numbers that go with the command to fully specify the operation. Some commands do not need any parameters.

The program starts by changing the GDC from character mode to graphics mode, and tells the chip how many words to display (16,000). The two paramenter bytes sent in line 135 set up the image of the line to be drawn. As the line is drawn, these 16 bits are repeated over and over to create the entire line. We want to draw solid lines for now, so all the bits are set to one, but later you should play with these numbers to see how the chip can draw almost any kind of dashed line automatically.

Next we use a form of the chips direct write commands to clear the 256,000 bits in 16 groups of 16,382 (a few extra for good measure). There are faster ways, but this is fun. The INP ( ) function in line 144 talks to the hardware again. This time it reads a value from that port, in this case hexadecimal 38, which returns the status of the chip. The bit with value 4, states whether or not the chip is still busy doing the last request. When it is nonzero, we're free to do more.

We are now set up, and now we draw lots of lines anywhere we want to with the subroutine at line 1000. For our purposes, this routine sets the screen up as an upper-right cartesian quadrant with (0,0) in the lower left corner, and (639,399) in the upper right corner. The origin can easily be moved by changing 399 in line 1030, and offsetting the value of x1 before it is used in line 1030 and 1040. These statements figure the exact word and bit needed by the GDC to start the line at. Everything after this is relative to the start point.

To optimize its drawing speed, the chip makes us figure out a lot about the line, and compute some strange numbers. First off, the chip needs to know which of 8 octants the line falls in. An octant starts at a 45 degree boundary, and coutinues counter clockwise up to (but not including) the next 45 degree line. The directions are numbered 0-7, with zero starting straight down. The signs and relative magnitudes of the distances to move are used in lines 1080-1240 to figure all this out. Now for the strange numbers. The chip needs to know which of the distances is larger (which we know from the octant), and needs some computations based on these. Four of the octants are computed one way, and four the other way. Each of these numbers is a 14 bit signed value.

We are now ready to tell the chip what our line looks like. Drawing the line takes two commands, one to specify it, and one to actually start drawing it. First, we specify this with the values already calculated. Each 14 bit value goes out in two pieces, first the lower 8 bits, and then the upper 6.

The formula (x-127.5)/256 and H3F is the best way I have found yet to get to the top 6 bits of a signed integer.

Once the specifications are out, we just tell the chip to DRAW and we are done.

Lines 3000-3010 prepare to exit the graphics mode. Basic will set the screen to character mode for us, but first we need to set up a register to

make things come out right. If for any reason, you Break from the program (could even be on an error), you may see a lot of garbage. You must first type in GOTO 3000 (just type it, you won't see anything but the cursor), possibly after an extra carriage return, to see what you are doing. The program will leave some garbage on line 25. It can be removed with some effort by accessing it with an escape sequence (see the QX-10 CP/M manual).

Obviously, graphics can be done a lot faster. As you watch the program run, you won't see the actual line being drawn, it just pops on the screen. Basic, being an interpreted language, slows things down a lot. Assembly langauge would be much faster. There is also a mode of the GDC that allows it to draw faster, but we don't need it here.

The initialization code, and the line draw subroutine are completely general, and can be used in many ways. Just watch your variable usage as usual in basic. Have Fun!!

```
5 DEFINT A-Z
10 POKE &HFAB2,0: 'TURNS OFF THE TIME UPDATE FLAG IN EPSON BIOS
110 REM SET UP PRAM BYTES TO FULL SCREEN OF GRAPHICS FROM MEM ADDRESS 0
115 REM WITH LINE DRAW PATTERN TO ALL ONES FOR NOW
120 OUT &H39,&H70:OUT &H38,0:OUT &H38,0:OUT &H38,0
130 OUT &H38,25+64:OUT &H38,0:OUT &H38,0:OUT &H38,0:OUT &H38,0
135 OUT &H38,&HFF:OUT &H38,HFF
139 REM NOW CLEAR THE SCREEN WITH DIRECT SET WRITE DATA COMMANDS
140 OUT &H39,&H49:OUT &H38,0:OUT &H38,0:OUT &H38,0: 'SET CURSOR TO 0
141 FOR I=1 to 16:OUT &H39,&H4C:OUT &H38,2:OUT &H38,&HFE:OUT &H38,&H7F
142 OUT &H39,&H20
143 OUT &H38,0:OUT &H38,0
144 IF (INP(&H38) AND 4)=) THEN 144:' WAIT FOR CHIP TO GET DONE WITH EACH GROUP
145 NEXT I:' CLEAR IN 16 GROUPS OF 16382
500 X1=320:Y1=200:' WE WILL DRAW A STARBURST OF LINES FROM CENTER
510 X2=639:FOR Y2=0 TO 399 STEP 4:GOSUB 1000:NEXT Y2:' COUNTERCLOCKWISE
520 Y2=399:FOR X2=638 TO 0 STEP -4:GOSUB 1000:NEXT X2:' ALL THE WAY AROUND
530 X2=0:FOR Y2=398 to 0 STEP -4:GOSUB 1000:NEXT Y2:' TO THE EDGES
540 Y2=0:FOR X2=0 TO 639 STEP 4:GOSUB 1000:NEXT X2
900 IF INKEY$="" THEN 900 ELSE 3000:' AND WAIT HERE FOR USER TO VIEW
1000 'SUBROUTINE TO DRAW A LINE FROM (X1,Y1) TO (X2,Y2)
1010 'SCREEN IS SET UP WITH (0,0) AS THE LOWER LEFT CORNER, AND (639,399) AS
1020 'THE UPPER RIGHT CORNER.
1025 IF (INP(&H3B) AND 4)=0 THEN 1025:' WAIT FOR CHIP TO BE UN-BUSY
1030 WORD=(399-Y1)*40+(X1/16):'COMPUTE THE SCREEN WORD ADDRESS FROM (X1,Y1)
1040 BIT=X1 AND 15:'DOWN TO THE BIT FOR THE EXACT START PIXEL
1045 'NOW GIVE THIS INFORMATION TO THE GDC AS THE START ADDRESS FOR THE LINE
1050 OUT &H39,&H49:OUT &H38,WORD AND &HFF:OUT &H38,WORD/256:OUT &H38,BIT*16
1060 DX=X2-X1:AX=ABS(DX):'COMPUTE THE RELATIVE X AND Y DISTANCES
1070 DY=Y2-Y1:AY=ABS(DY)
1080 IF DX>=0 THEN 1100:'NOW WE MUST FIGURE THE QUADRANT, THEN THE OCTANT
1090 IF DY>=0 THEN 1130 ELSE 1110
1100 IF DY>=0 THEN 1180 ELSE 1160
1110 IF AY>=AX THEN 1210
1120 DIR=6:GOTO 1250:'GOT THE EXACT OCTANT, NOW COMPLETE THE PARAMETER SETUP
1130 IF AY=0 THEN 1110:'SPECIAL CASES FOR TWO OF THE BOUNDARIES
1140 IF AX>=AY THEN 1220
1150 DIR=4:GOTO 1280
1160 IF AX>=AY THEN 1230
1170 DIR=0:GOTO 1280
1180 IF AX=0 THEN 1130:' THIS IS THE OTHER SPECIAL CASE
1190 IF AY>=AX THEN 1240
1200 DIR=2:GOTO 1250
1210 DIR=7:GOTO 1280
1220 DIR=5:GOTO 1250
1230 DIR=1:GOTO 1250
1240 DIR=3:GOTO 1280
1250 DC=AX:D=AY-AX+AY:'THE GDC NEEDS THESE 5 16-BIT PARAMS FOR THESE 4 OCTANTS
1260 D2=(AY-AX)+(AY-AX)
1270 D1=AY+AY:GOTO 1310
1280 DC=AY:D=AX-AY+AX:'SAME 5 PARAMS, DIFFERENT NUMBERS FOR THE OTHER 4 OCTANTS
1290 D2=(AX-AY)+(AX-AY)
1300 D1=AX+AX
1310 OUT &H39,&H4C:'NOW GIVE THEM ALL TO THE CHIP TO SPECIFY THE LINE
1320 OUT &H38,DIR+8:'SET IT TO LINE DRAW MODE IN THE SECEFIED DIR
1330 OUT &H38,DC AND &HFF:OUT &H38,DC/256+64:'EXTRA GRAPHICS FLAG IN THIS PAIR
1340 OUT &H38,D AND &HFF:OUT &H38,(D-127.5)/256 AND &H3F
1350 OUT &H38,D2 AND &HFF:OUT &H38,(D2-127.5)/256 AND &H3F
1360 OUT &H38,D1 AND &HFF:OUT &H38,D1/256
1370 OUT &H39,&H6C:'NOW GIVE THE CHIP THE COMMAND TO DRAW, AND WE ARE DONE
1380 RETURN
3000 OUT &H39,&H4A:OUT &H38,&HFF:OUT &H38,&HFF:' SET UP GDC FOR RETURN TO CHAR.
3005 POKE &HFAB2,&HFF:' AND TURN THE CLOCK UPDATE BACK ON
3010 PRINT CHR$(26);:'CLEAR OFF THE GARBAGE, AND THAT IS ALL WE NEED TO DO
3020 END
```

QUESTIONS & ANSWERS

Q— I was trying to run an A.T.I. (Trademark of American Training Institute) training power program, but found that the screen kept writing over itself without clearing the screen first, so it was all garbled and hard to read. What should I do? Steve S.
A— You will need to change the installation information about your computer type. Type in **Install.com** and you will see the following prompts for input: (type in the following bold responses)

1. Number of lines displayed on terminal (decimal). **24**
2. Does terminal use ANSI standard (Y or N) **Y**
3. Is cursor addressed by row first (Y or N) **Y**
4. Offset to be added to the row and column (decimal) **32** *(which is the same as 20Hexidecimal)*

This will follow with some questions about the cursor positioning—

5. Initial cursor positioning string **26,61**
6. Row and column separation string *(leave blank)*
7. *Terminating curs*
7. Terminating cursor positioning string **56,112**
8. Clear screen and home cursor string **26,30**
9. System clock speed in 100khz **40**

This should clear up the problem. Most software, if you have specifically ordered it for the QX-10, is already setup properly for you and you won't have to go through this, or it will ask you what type of terminal you have. You will have to enter the information above if there are no options listed for terminal type: QX-10 or Televideo 920.

Q— I have a problem where I have both disks inserted but it keeps telling me to insert the data disk.
A— Occasionally when a disk is removed while the drive was working (please don't do this), it renames the drive. Press UNDO until it shows [S1] type BO return, when you see B>, type A: return, when you see A>, type SETUP return choose option D return, then [U]ser return, BO return, and then press undo twice and you should be all set. If you have more problems call the tech person at your dealer.

Q— I find it a great nuisance to have to remember to set the justification and the margins, each time I start a new document, since I usually want the same ones every time. Is there a way this can be remedied? Michael J. D.
A— Yes, just set up a blank file with the margins and justification selected, store that, calling it something like "letter format", then each time you want to use it, just retrieve it and go.

Q— Is there a way to send FX-80 control codes directly from Valdocs? Michael J. D.
A— Yes, you can create a file in TPM, with the control codes in it, then retrieve it while in the editor as a non-indexed file, this will then merge the control codes into the Valdocs document.

Q— The graphics characters which Valdocs will display on the screen do not print correctly on my RX-80 printer. Do I need a different printer or different software?
A— The only printer right now that will support the graphics characters is the FX, and you will need a special program to do this. (More on this in the future). Check with your dealer for details.

Q— Is there a way to suppress page numbering entirely when printing a file? Michael J. D.
A— Yes, there now is this option available in the Valdocs 1.18.

TECHNICAL

Problem— My disk is making a scraping noise while it spins, it is "hung up" with nothing happening and the red light on the drive stays on.
Solution— Your disk may not be centered properly within its covering, if it continues to spin with the red light lit on that drive, turn the computer off, and remove it. **Never remove a disk when the light is indicating the computer is trying to access it.** Examine the center circle area of the disk, if it seems alright and not otherwise damaged, you can try reinserting it. If the problem continues, remove it try another disk, and discard the problem disk.

Problem— I just bought my QX-10 and have used it a few days. It suddenly started to blink and kept repeating "Insert Data Disk" even though one was properly inserted. Nothing I do seems to change it. Phil M.
Solution— Your QX-10, when new, needs a chance to charge up the nickle cadmium battery inside the case. We recommend you leave it turned on for 12 hours at least, when you first get it.

The following steps, if followed carefully, should get you back on the right track: With the computer running, put the little white dip switches, no. 1 and no. 2, located in the rear of the computer unit, both down (the rest will be up). Press the reset button on the front just below the disk drive labeled B. Your screen will now show **Zapple**. Type in the following: **CO3E,0**(zero) and press return. Next put the Dip Switch no. 2 back up, and press reset once more. You should be up and going, please don't forget to let it charge, once should be enough.

CAUTION— A reader using the zoom program published in the July/August issue, lost all his files on his CP/M disc. Fortunately, he had a back up copy. Thanks Richard E. B., and sorry that it happened.

No one else has mentioned having this problem and I have never had any trouble with it, however, we thought we would pass it along.

SOFTWARE REVIEW NEWS

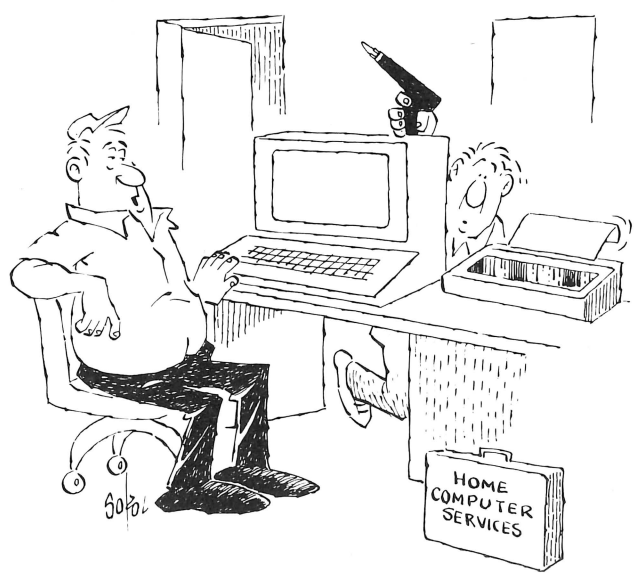
USING PEACHTREE MAILING LIST WITH YOUR EPSON QX-10 (FOR ALL CP/M BEGINNERS)

There have been numerous similar comments from Users regarding CP/M, "I sure don't understand CP/M, it is so hard to use compared to Valdocs." Fear not, we can conquer it together. With your QX-10 you received a couple of useful books, *Using CP/M-80 with the QX-10,* a preliminary draft by Epson America, Inc. 1983, and **CP/M Primer for the QX-10** by Murtha and Waite. The short section in the volume by Epson America, Inc., called "Getting Started" will familiarize you with how to start, and how to utilize the copy disk program to make a copy of your disk, as well as how to copy the CP/M **system** tracks to another disk.

To use Mailing List by Peachtree, you will need to: 1) Copy the mailing list manager disk onto another disk, 2) Copy the CP/M system tracks onto that disk. 3) Copy the program BRUN .com from the CP/M disk onto the new disk. To do this last copy function, you will use the PIP command to copy a file from the CP/M disk to the new disk we are setting up. When you do A>PIP (return) you will see an * on the next line. You are now ready to tell the computer the DESTINATION (eg. B:) of the file you want copied, and then the SOURCE (eg. A:) of the file to copy, and the FILENAME. The following will take BRUN.com and copy it from the left (A) drive, and put it on the right (B) drive. ***B:=A:Brun.com** return. You are now ready to procede with the sample mailing list programs Peachtree has set up for you. I, of course, looked at the manual and tried one sample, said "OK, I can do this", and started in. Shortly thereafter, things did not go so well. Learning quickly, I went through all the rest of the samples as I should have done originally. One thing that is not pointed out very clearly, buried in a nice paragraph in the Reference Guide section, there is reference made to "creating a file on a drive other than the default drive". If you have your Mailing List disk in the left (A) drive, and want to have your mailing list files stored on the right (B) drive, you need to indicate it when first naming the file.

MAILING LIST MANAGER
"Define Address File"
File: [Filename] – prefix the filename with B:. . .(Example: B:Userslist)

This mailing list program is very handy for people who need to store names, and has more flexibility than Valdocs at the present time.



"The index reads– Watch it with that damn soldering iron!"

NEW QX-10 PROMOTION FOR OCTOBER ANNOUNCED

Beginning October 3, Epson America, Inc. has announced a special promotional sale. With the purchase of a QX-10, you will receive a free printer and various software. The promotional package may vary in different parts of the country, so contact your local dealer for details.

EPSON NEWSNOTE:

Epson will be going on line with Compuserve and Source to provide general information and support to small businesses and individual owners. It will also provide a question and answer support system.

They are also in the process of setting up a bulletin board for questions and answers. Meantime, use their Hot-line numbers for problems.
California (213) 603-0819
Outside California, 800 556-6721.

HX-20 NEWSNOTE:

Lochlend, according to Aviation Magaizine, has purchased HX-20's for use with their C130 fleet of aircraft as a flight manual.

FORMING LOCAL USERS GROUPS

We will be assisting in the formation of local groups for Epson computer users. Please send us your name, address (including zip code), and indicate which computer you have. We will try to put you in touch with others in your area. If you are interested in coordinating a local group, let us know, and we will list your name and address in our newsletter.

BOOKSTORE

BOOK REVIEW

The QX-10 Book, Version 1.18 by David Barrett & Michelle Mehterian. Copyright 1983. Published by the Barian Company, 11701 Wilshire Blvd., Suite 13-B, Los Angles, CA 90025, (213) 826-9495. The book sells for $15.95 and can be ordered directly from Barian Co. It is also being made available to computer dealers through Micro Media Marketing, 61 South Lake Avenue, P.O. Box 4509, Pasadena, CA 91016.

I highly recommend this book to all QX-10 owners. It contains a wealth of information not previously available to owners. The book begins with anecdotal adventures of some characters as they try to decide what computer to purchase, and then as they try it out. There are sections on CP/M and TPM and helpful hints on using the keyboard features, and the Peachtree Spelling Proofreader program. There are instructions on inserting the modem card and using the mail feature for telecommunications. I found the index full of the following useful information: Menus and keyboard feautres, a computer dictionary as it pertains to the Epson and products, documentation for the modem 7 program and more than 500 Public Access and file Transfer systems with phone numbers. (Programmers, the details of TPM and CP/M bios codes and call routines are not in this book.) It is a good book to own and I am sure you will find it helpful.

Two more books by the Barian Co. will be forthcoming: *The QX-10 Programmers Guide*, due out in January, and *The QX-10 Book— Volume II*, to be released at the same time as Valdocs version 2.0.

BOOKS ABOUT CP/M

The first issue of the Epson Connection contained an article about CP/M, an alternative to Valdocs which allows you to use the vast amount of software which works with CP/M. One of the better books describing CP/M is distributed with your Epson, but there are many, many more. The following list is sectioned off for "newcomers" to computing and for "old timers"— those with some computer experience and an interest in programming.

First, a Book About Personal Computing

Peter A. McWilliams, *The Personal Computer Book (2nd Edition)*, Prelude Press/Ballantine Books, Los Angeles and New York, 1983, $9.95. The book is informative, accurate, amusing and inexpensive. It is an excellent introduction to computers and computing.

CP/M FOR BEGINNERS

Stephen M. Murtha & Mitchell Waite, *CP/M Primer (2nd Edition)*, Howard W. Sams, Indianapolis, IN, $16.95. This is the second edition of the book provided with the CP/M distributed with the Epson.

Thomas A. Dwyer & Margo Critchfield, *CP/M and the Person Computer*, Addison-Wesley, Reading, Massachesets, 1983, $19.95. The book is very, very comprehensive and covers computers, CP/M and many of the programs which work with CP/M.

Rodney Zaks, *The CP/M Handbook (with MP/M)* SYBEX, Berkley, CA, 1982. $14.95.

Thom Hogan, *Osborne CP/M User Guide (2nd Edition)*, Osborne/McGraw-Hill, 1982, $15.95.

Judi N. Fernandez & Ruth Ashley, *Using CP/M: A Self-Teaching Guide*, John Wiley, New York, 1980, $14.95.

Jeffrey R. Weber, *CP/M Simplified*, Weber Systems, Cleveland, OH, 1982, $13.95.

BOOKS FOR "OLD TIMERS"

Alan R. Miller, *Mastering CP/M*, SYBEX, Berkley, CA, 1983, $14.95.

Lawrence E. Hughes, *System Programming Under CP/M-80*, Reston Publishing Co. (A division of Prentice-Hall), Reston, VA 1983. $15.95.

Mitchell Waite & Robert Lafore, *Soul of CP/M*, Howard W. Sams, 1983, $18.95.

Andy Johnson-Laird, *The Programmer's CP/M Handbook*, Osborne/McGraw-Hill, 1983, $21.95.

Sol Libes, *Programmer's Guide to CP/M*, Microsystems Press, Morris Plains, NJ, 1982, $12.95.

BOOKS FOR LEARNING HOW TO PROGRAM THE Z-80 MICROPROCESSOR

Lance Levanthal, *Z80 Assembly Language Programming*, Osborne/McGraw-Hill, Berkeley, CA, 1982, $16.95.

Lance A. Leventhal & Winthrop Saville, *Z80 Assembly Language Subroutines*, Osborne/McGraw-Hill, Berkeley, CA 1983, $15.95.

Rodney Zaks, *Programming the Z80 (3rd Edition)*, SYBEX, Berkeley, CA 1982, $16.95.

POTPOURRI

RUMORLINE

This column is strictly for unsupported rumors that have come from various sources. If they become substantiated, they will be mentioned under our new prodcuts section.

Rising Star is designing an internal Ramdisk (board) for the QX-10 to run Valdocs from— much faster.

Valdocs 2.0 will allow subscript, superscript, mailmerge from the mail file into the Valdocs documents, footnotes, change page size per page, change headers and footers, and insert print controls into the text. Let us hope it might include the ability to search for text and index it by what page number the text appeared on. (There are so many authors & writers using the QX-10.

Comrex will be putting out a 1200 Baud communicator card by spring.

**We understand that there are a few companies bidding on producing the 8086 board for Epson America. The decision should be coming soon and the board available by spring.

Prototypes of a 128 K Ram disk with software to support Valdocs are being talked about, there seem to be a few around.

Rising Star is beginning to do HX-20 software.

WHAT?? COMPETITION???

This is true dedication to sharing information.

Rising Star is offering a free newsletter. Some of you may have already received a copy from us, compliments of Rising Star Ind., 24050 Madison, Suite 113, Torrance, CA 90505, (213) 378-9861. Their forthcoming issue will feature articles about educational programs, version 1.18 and "Telos 10", their new version of Forth. This new language will be marketed by RSI. *Rising Star will be refunding the $25 subscription fee to anyone who has already sent them a check.*

QHX is the name of yet another monthly newsletter published by The Epson Computing Group, 400-2 East DeYoung, Marion, IL 62959. Cost for the newsletter is $25.00 per year.

PRINTERS

Comwriter printers, by Comrex are supported by Valdocs 1.18 in the following fashion:

CR-1— go into the setup, indicate CR-1, and indicate in the printer characteristics that it has a buffer (2K)

CR-2 (emulates a Diablo 630) printer needs to be selected as follows: In the setup program, select printer type as OTHER. Under printer characteristics, indicate that it does not have auto linefeed, that, YES, it has a buffer (5K); and that you can indicate print speed as 30 (this will allow it to maximize its speed). You will want to make sure the number of unprintable lines at the top is zero, unless you are using letterhead stationary or are doing other special things.

Note: The choice of the number of lines only applies to the letter quality printers, not to the dot-matrix printers.

Printer Suggestion— For those with a dot-matrix printer, (MX, RX or FX for example) if you are feeding through individual sheets, you can disable the **paper out** feature by looking up the dip switch that controls the paper-end, and set it to the **ON** setting.

MEMBERSHIP FORM

NAME _____

COMPANY NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

Canada CITY _____ PROVINCE _____ POSTAL CODE _____

PHONE _____ COMPUTER PHONE _____

Area Code

Which Epson model did you purchase? QX-10 ___ HX-20 ___

For what purpose did you acquire your Epson? Personal ___ Business ___

If Business, what profession? _____

Did you purchase a printer? Yes__ No__ If yes, which make & model? _____

Do you belong to a computer network? Source__ Compuserve__ Other _____

__ Enter my name into the Users Group, enclosed is my check for $10.00 ($12.00 Canada)

__ Enter my name as a User, I am not interested in joining at this time.

__ I would like to organize a local group.

THANK YOU, AND WELCOME TO THE EPSON FAMILY!

The Epson Connection
P.O. Box 14027
Detroit, MI 48214

POTPOURRI

USERS GROUPS

Long Island, NY— QX-10 group with an EMail 24 hour line (516) 567-8267, and a bullentin board from 7 p.m. to 9 a.m., (516) 567-8267.

Pittsburgh, PA— Group is having their first meeting in September. Computer Brokers is sponsoring the start up. Contact Jack Friedman (412) 642-7750.

HX-20 London, England— First issue of their group's newsletter was published in June. Contact person is: Terence L. Ronson, 25 Sawyers Lawn, Drayton Bridge Rd., Ealing, London W13. There are some products mentioned in their newsletter that are not available in the U.S. or Canada.

This is also the case with the QX-10 version available in Great Britain. *Personal Computing World*, a British computer magazine, indicated in their July issue that Valdocs is not available in Great Britain, and that they have some different hardware inside to do more font styles that are not available here.

Your Corner

Mike D. of Marietta, GA suggests substituting "enter a character" for "enter a word" in the graphics program listed in our first issue, and then entering a graphics character (called by numbers 175 to 255).

Mike also shares a way to transfer data from a CP/M supported bulletin board program using Valdocs. Using mail, [p]erson to person, and dialing the number of a known regional cpm (you must have a modem for this), use the following procedure when you find a program that you want to copy: type "xmodem s [filename, type]", press **undo**, then move the cursor to [r]eceive a file, press **return**, and you will begin receiving the date. The transfer time is about 1.5kbytes per minute at 300 baud, and 6k per minute at 1200 baud rate.

Compliments of the Van Dyke Place Restaurant at 649 Van Dyke, Detroit, MI, a fine gourmet restaurant and proud owners of a QX-10.

La Blanquette a la Menagere

2 to 3 quarts of veal stock
1 lb. cubed meat (veal or beef)
1/2 lb. peeled diced potatoes
4 carrots diced
3 stalks celery (cut on bias)
1 onion diced
4 T. butter
salt & pepper to taste

Sautee in order, onions, carrots, and celery till onions are translucent. Remove from pot and add meat. Sautee till brown. Return vegtables, double the volume with veal stock, and bring to a boil. Simmer for 1 1/2 to 2 hours. Top with a large crouton and grated Gruyere cheese, set under a broiler until the cheese melts and seals the top.
Serves 8

EPSON Connection
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The Epson Connection is a bi-monthly Newsletter distributed to members of the Epson Users Group. Membership fee is $10.00 U.S., $12.00 Canada for one year.

All inquiries regarding membership; editorial suggestions; problem solving; questions; programs or information about forming a local Users Group should be sent to THE EPSON CONNECTION, P.O. Box 14027, Detroit, Michigan 48214.

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